98-319h-10

# Salmon River Restoration Council

**319 (h) 1999 Final Report**

August 1998 through July 1999

Tasks completed or worked on under agreement # 14-48-11333-98-J262, entitled "Salmon River Restoration Monitoring, Monitoring Education Program" by SRRC staff and volunteers:

- We have provided the three local schools with technical assistance related to watershed management and ecosystem awareness education.
- We have sponsored a number of technology training sessions for the schools, SRRC participants, other watershed groups and the interested public. These sessions included computer fundamentals, GPS and hobo temp data collection and a GIS overview.
- We have shared developed GIS products with interested agencies, the three local schools, community groups and the general public.
- Staff and volunteers used GPS and GIS to map and analyze previous SRRC restoration and protection projects.
- Two staff members attended an in-stream monitoring conference at HSU.
- Two staff members attended an ArcView GIS Training at OSU.
- Two staff members attended a Salmonid Restoration Federation Conference.
- Three staff members attended a Monitoring roundtable discussion in Scott Valley.
- One staff member attended the 1999 ESRI GIS User's Conference in San Diego.
- Staff and students attended the KRIS forum in Yreka on March 16th.
- Technical Coordinator attended several Technical Work Group Meetings.

## Temperature Monitoring

During the winter of 1998-1999, temperature data collected on the Salmon River during the 1998 season was edited for erroneous data points and input into the KRIS system. A total of 40 locations were monitored during the 1998 season. All but one station collected data between the months of June and November. Two other stations had partial data sets. Data were analyzed using the daily MAX/MIN/AVE treatment in the KRIS software. Data sets were grouped around tributary "brackets", with a Hobo Temp above, below and in the tributary. Initial analysis showed that only three tributaries provided enough cool water to cool the river significantly. They were Taylor Creek, South Russian Creek and Little North Fork.

# Salmon River Restoration Council

**319 (h) 1999 Final Report**

Partners on this project included the USFS, Salmon River District and Happy Camp/Ukonom District. Data from the Happy Camp District is being edited at this time and will be contributed to the KRIS system at the SRRC shortly. No data from the Salmon River District was available due to technical problems with the instruments. This left a few data gaps in the bracketing analysis. Most critically were the two forks (North and South Fork), just above the main stem and the East Fork at the South Fork confluence.

The Salmon River Restoration Council (SRRC) worked closely with the three local schools who had responsibility for several of the Hobo Temps. The technical oversight and the compilation of the data by SRRC were critical to the success of this cooperative program. Together, students and SRRC personnel presented their findings at the annual KRIS forum held in Yreka on March 16, 1999. Students from Forks of salmon School and Sawyers Bar School received awards for their work on this project.

On April 9, 1999 a meeting was held with the SRRC, and the USFS, Salmon River and Happy Camp/Ukonom personnel to discuss the results from this past year and to plan the design for the 1999 season. See the attached strategy and objectives of the monitoring program for this season (see Study Design Appendix 1). A total of forty locations were identified to be monitored under the direction of the Salmon River Restoration Council using Hobo Temps, electronic temperature monitoring devices.

An effort to involve community members in the temperature monitoring program on the Salmon River is taking place during the 1999 season. A total of five community members have stepped forward to commit to this program. Sharon Hoppas and George Martin live in the upper South Fork area and are monitoring seven stations. Tom and Lorelei Holzem live in the upper North Fork area are responsible for nine locations and Sara Hugdahl lives on the Main Stem Salmon and is looking after nine stations in this area. Community member participation is taking place initially on a volunteer basis, with training and supervision provided by the SRRC project leader, Sue Maurer. Once their skills are sufficient, they will assumed full responsibility for checking, downloading and relaunching those Hobo Temp units assigned to them. Building the skill base and the capacity of the Salmon River community to participate in the restoration program is a main goal of the Salmon River Restoration Council. Additionally, the three elementary schools within the watershed are monitoring locations: Sawyers Bar School- 3, Forks of Salmon School- 3 and Junction School-1. Dara Pearson, AmeriCorps member on the Salmon River is an integral part of the 1999 program and supports the schools and the community members with her expertise. Field notebooks were designed and produced by the Salmon River Restoration Council and bound at the Siskiyou County Office of Education. Each partner was trained in the field protocol and data entry method. All the data collected by the community partners using laptop computers provided by the SRRC. Data is transferred via disk and is submitted to the Salmon River Restoration Council for processing.

The following activities took place during the May through July reporting period:

# Salmon River Restoration Council

**319 (h) 1999 Final Report**

Hobo Temp Calibration- May 5 and 20, 1999

A total of 40 Hobo Temps were calibrated in a zero degree C water bath on May 5, 1999. This was accomplished by two community volunteers, two students, the AmeriCorps member and the SRRC project leader. A total of 26 volunteer/match hours were spent on this day. On May 20, 1999 the Hobo Temp units were calibrated at room temperature by the AmeriCorps member, taking an additional 8 hours of matched time.

1999 Season Hobo Temp Launch

The attached list of "Hobo Temp Locations and Responsibilities" details the specific location of each temperature monitoring units and the community members/ schools/ and SRRC staff responsible for each.

Hobo Temp launch occurred on:

| Date | Partner | Volunteer Time |
|---|---|---|
| May 28 | Sawyers Bar School- 11 students | 4 hours |
| June 4 | Junction Schools- 16 students | 4 hours |
| June 5 | SRRC | 7 hours |
| June 7 | Forks of Salmon School- 7 students | 4 hours |
| June 8 | Holzem with SRRC | 7 hours |
| June 12 | Hoppas/Martin with SRRC | 15 hours |
| June 13 | Hugdahl/ with SRRC | 14 hours |
| | Total | 55 hours |

Hobo Temp "Check" occurred in early July, roughly one month after the launch date, by each party responsible. The purpose of the check is to make sure the unit is still there and in at least 1 foot of water. The "checks" were accomplished by each community member without SRRC direct supervision. This amounted to an additional 15 hours of volunteer time. The locations that the three schools monitor were checked by SRRC staff over the summer. The first download is planned for the early part of August and will take place under the supervision of SRRC staff.

# Salmon River Restoration Council

**319 (h) 1999 Final Report**

Summary of In-Kind and Volunteer Services:

| Description | Quantity | Value |
|---|---|---|
| Donated vehicle mileage @ $.31/Mi | 6700 | $2,077.00 |
| Community Volunteer @ $12/Hr + Benefits | 230 | $3,588.00 |
| GIS Volunteer @ $50/Hr | 57 | $2,850.00 |
| Value of GIS & GPS Services @ $50/Hr | 200 | $10,000.00 |
| **TOTAL In-Kind** | | $18,515.00 |

**1999 Hobo Temp Locations, Filenames and Responsibilities, 8/9/99**

Objective 1: Bracket of Tributaries (30)

| Stream | Responsibility | Filename | # of Units |
|---|---|---|---|
| Salmon River | USFS-Grunbaum | | 3 |
| Wooley Creek | USFS-Grunbaum | | 3 |
| Main Stem below Forks School | Forks of Salmon School | KSA19_8 | 1 |
| S. Fk above Forks | SRRC-SH | KSS00_2 | 1 |
| N. Fk. above Forks | SRRC-SH | KSN00_1 | 1 |
| N. Fk. Salmon above LNF | SRRC | ASN11_4 | 1 |
| N. Fk. Salmon below LNF | Sawyers Bar School | ASN11_0 | 1 |
| Little North Fork | Sawyers Bar School | ALN01_0 | 1 |
| Little North Fork AIR | Sawyers Bar School | ALNAIR | 4 |
| Specimen | USFS-Kilgore | | 3 |
| N. Fk above Russians | SRRC-LDH & TH | KSN20_5 | 1 |
| N. Fk. Below Russians | SRRC-LDH & TH | KSN19_8 | 1 |
| N. Russian below S. Russian | SRRC-LDH & TH | KRU01_0 | 1 |
| N. Russian above S. Russian | SRRC-LDH & TH | KRU03_0 | 1 |
| S. Russian | SRRC-LDH & TH | KRU02_0 | 1 |
| S. Fk. Salmon above Knownothing | SRRC | KSS02_5 | 1 |
| S. Fk. Salmon Below Knownothing | SRRC | KSS02_3 | 1 |
| Knownothing Creek | SRRC | KKN01_0 | 1 |
| S. Fk. Salmon above East Fork | SRRC-SH &GM | KSS20_0 | |
| East Fork at East Fk. CG | SRRC-SH &GM | KSE01_0 | 1 |
| S. Fk. Salmon below East Fork | SRRC-SH &GM | KSS19_1 | 1 |
| East Fk. Salmon above S. Taylor | SRRC-SH &GM | KSE02_1 | 1 |
| East Fk. Salmon below S. Taylor | SRRC-SH &GM | KSE01_4 | 1 |
| S Taylor | SRRC-SH &GM | KTA01_0 | 1 |

Objective 2: Tributary Mouths (10)

| Stream | Responsibility | Filename | # of Units |
|---|---|---|---|
| Merrill Creek | Junction School | JMR01_0 | 1 |
| Butler Creek | SRRC/Community | KBU01_0 | 1 |
| Nordheimer Creek | Forks of Salmon School | KNO01_0 | 1 |
| Nordheimer Creek-AIR | Forks of Salmon School | KNOAIR | 1 |
| Methodist Creek | SRRC-SH | KME01_0 | 1 |

| | | | |
|---|---|---|---|
| Blackbear Creek | SRRC-SH | KBB01_0 | 1 |
| Blackbear Creek-AIR | SRRC-SH | KBBAIR | 1 |
| Indian Creek | SRRC-SH | KIN01_0 | 1 |
| Cecil Creek | SRRC-SH & GM | KCE01_0 | 1 |
| Eddy Gulch | Sawyers Bar School | AEG01_0 | 1 |

Objective 3: Tributary Longitudinal Temperatures (13)

| Stream | Responsibility | | # of Units |
|---|---|---|---|
| Wooley Creek (bracket NF) | USFS-Grunbaum | | 3 |
| Crapo Creek | SRRC-SH | KCR01_0 | 1 |
| Specimen Creek | USFS-Kilgore | | 2 |
| N. Russian-above China | SRRC-LDH & TH | KRU07_0 | 1 |
| N. Russian-above Joltass | SRRC-LDH & TH | KRU11_0 | 1 |
| East Fk. Knownothing below Granite Gl. | SRRC | KKN04_0 | 1 |
| West Fk. Knownothing below Poverty Gl. | SRRC | KKN02_0 | 1 |
| Knownothing Creek below East & West Fks. | SRRC | KKN01_1 | 1 |

Objective 4: Long-term River Monitoring (3)

| Stream | Responsibility | Filename | # of Units |
|---|---|---|---|
| S. Fk. Salmon above Blackbear | SRRC-SH | KSS08_5 | 1 |
| N.Fk. Salmon below Eddy Gl | SRRC-LDH & TH | ASN15_2 | 1 |
| Nordheimer-Below | SRRC-SH | KSA14_7 | 1 |

**Appendix 1 Salmon River Cooperative Temperature Monitoring Group**
**Study Design for 1999 Salmon R. Temperature Monitoring Program 4/9/99**

A planning meeting between the Salmon River Restoration Council and the USFS, Ukonom RD and Salmon River RD personnel was held at Forks of Salmon on April 9, 1999. In attendance were Jim Villeponteaux, Sue Maurer, Jim Kilgore and Jon Grunbaum. The following objectives and subsequent study design were developed for the 1999-monitoring season:

1. Determine the influence of the temperature of major tributaries to the main river temperature by bracketing above, below and in the tributary. A reduction of the number of tributaries bracketed will occur this year. Those selected will meet one of the following criteria:
   a) have currently only one year of data
   b) no complete bracket has been previously obtained
   c) previous data shows influence in at least one of the past two years.

2. Determine the temperature of all tributaries just above the confluence with the main river. These are tributaries have been previously monitored, but are not included in objective 1. Monitor air temperature at three locations: Little North Fork, Nordheimer and Blackbear Creeks. Grant Creek will be omitted from tributary monitoring due to its lack of significant volume.

3. Determine longitudinal temperature change for specific tributaries by locating units at three or more locations from the mouth to the headwaters: Crapo, Specimen, Wooley, North Russian and Knownothing Creeks.

4. Continue long-term trend and project monitoring of river temperatures in mainstem, north and south forks, by retaining previous monitoring locations spaced throughout the watershed.

**Appendix 1 Salmon River Cooperative Temperature Monitoring Group**
**Study Design for 1999 Salmon R. Temperature Monitoring Program 4/9/99**

**Proposed 1999 Locations and Responsibilities, 4/23/99**

Objective 1: Bracket of Tributaries (30)

| Stream | Responsibility | # of Units |
|---|---|---|
| Salmon River | USFS-Grunbaum | 3 |
| Wooley Creek | USFS-Grunbaum | 3 |
| NFk/SFk/Mainstem | SRRC | 3 |
| Little North Fork & AIR | Sawyers Bar School | 4 |
| Specimen | USFS-Kilgore | 3 |
| Russians N Fk & S Fk | SRRC | 5 |
| Knownothing Creek | SRRC | 3 |
| East Fork | SRRC | 3 |
| S Taylor | SRRC | 3 |

Objective 2: Tributary Mouths (10)

| Stream | Responsibility | # of Units |
|---|---|---|
| Merrill Creek | Junction School | 1 |
| Butler Creek | SRRC/Community | 1 |
| Nordheimer Creek | Forks of Salmon School | 1 |
| Nordheimer Creek-AIR | Forks of Salmon School | 1 |
| Methodist Creek | SRRC | 1 |
| Blackbear Creek | SRRC | 1 |
| Blackbear Creek-AIR | SRRC | 1 |
| Indian Creek | SRRC | 1 |
| Cecil Creek | SRRC | 1 |
| Eddy Gulch | Sawyers Bar School | 1 |

Objective 3: Tributary Longitudinal Temperatures (13)

| Stream | Responsibility | # of Units |
|---|---|---|
| Wooley Creek (bracket NF) | USFS-Grunbaum | 3 |
| Crapo Creek | SRRC | 3 |
| Specimen Creek | USFS-Kilgore | 2 |
| North Russian Creek | SRRC | 2 |
| Knownothing Creek | SRRC | 3 |

Objective 4: Long-term River Monitoring (3)

| Stream | Responsibility | # of Units |
|---|---|---|
| Blackbear-Above | SRRC | 1 |
| Eddy Gulch-Below | SRRC | 1 |
| Nordheimer-Below | Forks of Salmon School | 1 |